

POSITION AND SPEED DETECTING DEVICE

Patent Number: JP11098876
Publication date: 1999-04-09
Inventor(s): MOTOYAMA ATSUSHI; WATANABE MASAHICO; TAKAHASHI JUNICHI; TOMINO YOJI; MIYAHARA YOJIRO; IGARI AKIHIRO
Applicant(s): HITACHI LTD
Requested Patent: JP11098876
Application Number: JP19970256451 19970922
Priority Number (s):
IPC Classification: H02P5/00; G01B7/00; G01D5/245; G01P3/44
EC Classification:
Equivalents:

Abstract

PROBLEM TO BE SOLVED: To reduce sensitivity due to noise and enable position and speed detection with accuracy, by making a rotational position signal, calculated from an inducing signal having the frequency of an exciting signal as a fundamental wave and the exciting signal having phase difference through sum of products operation, follow phases through software PLL processing.

SOLUTION: For a microcomputer 102, an arithmetic operation is performed at a position and speed detecting section 101 using timing pulses output from a timing pulse generating section as an interrupt signal. The voltage of inducing signals V_r1 , V_r2 and exciting signals V_s1 , V_s2 is input to the microcomputer 102 from A-D converters 103-106. A signal varying with a rotational frequency obtained by expressing rotational position signals V_e1 , V_e2 in first sum of products operation as rotational position θ_r , and subtracting an exciting frequency component from the frequency of the inducing signals, is used in the software PLL processing on the microcomputer. The rotational speed is detected by determining the change in the position detected through software PLL processing on the microcomputer 102 using a differentiation element 120. Thus, the phase can be PLL-processed on software for a microcomputer or the like, and can be sufficiently followed.

Data supplied from the esp@cenet database - I2